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Office of the Vice President

Development Economics
The World Bank
March 1990
WPS 58

Background paper for the 1989 World Development Report

Macrofinancial Indicators for 117 Developing and Industrial Countries

Craig R. Neal

Reducing inflation is the only sustainable way to increase the size of a country's financial system and thus promote the economic efficiencies associated with bank financial intermediation. Raising nominal deposit rates to fully offset higher inflation requires maintaining progressively higher real deposit rates. These real rates can reach unsustainable levels even at "only" double-digit inflation rates.

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This paper, a background paper for the 1989 World Development Report, is a product of the Office of the Vice President, Development Economics. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact the World Development Report office, room S13-060, extension 31393 (57 pages with figures and tables).

Based on macrofinancial data from 117 developing and industrial countries for the year 1985:

- Regression analyses indicate that higher inflation lowers overall financial depth, whereas higher nominal deposit rates raise it. However, the effects of inflation are more corrosive than nominal deposit rates are salutary. Consequently, raising nominal deposit rates to fully offset higher inflation requires maintaining progressively higher real deposit rates. These real rates can reach unsustainable levels even at "only" double-digit inflation rates.

- Analyses of variation indicate that overall financial depth, nonmonetary financial depth, and the weighted real return on financial assets vary systematically across geographical region and across per capita income groups (a proxy for wealth or development). In contrast, monetary depth is broadly similar across both income groups and geographical regions — except in the EMENA region (Europe, the Middle East, and North Africa), which is unusually deep (reflecting exceptionally high M1:GDP ratios in six of the 18 sample countries).

- Deep financial systems typically reflect nonmonetary depth except in the countries of EMENA, where they reflect monetary depth.

Although Neal could not determine which factor is responsible, either anomalous macrofinancial behavior or poor data quality (or both) produce odd results when the data from the Sub-Saharan region are used in the regression analyses.

The appendix lists the following macrofinancial indicators for each of the 117 countries: The ratio of liquid liabilities (of the financial system) to GDP — financial depth, the ratio of quasi-liquid liabilities to GDP — nonmonetary depth, and the ratio of M1 to GDP — monetary depth. Also listed are: Per capita income, inflation rates, and the weighted real return on financial assets (the liquid liabilities of the financial system).

Produced at the PRE Dissemination Center

Macro-Financial Indicators for One Hundred Seventeen Developing and Industrial Countries

Craig R. Neal: The World Bank*

1. This paper examines macro-financial data from one hundred seventeen developing and industrial countries for the year 1985 (see the Annex for a country listing). The objective is to broadly characterize the financial systems of these countries using generally available data and to produce a set of comparative indicators for use in other work in this area. The analysis reveals that

- The level of economic development and institutional factors associated with geographic location are key determinants of the size of a country's financial system. Other macro-financial characteristics, such as the mix between monetary and interest-bearing financial instruments, also vary systematically with region and level of economic development.
- Inflation negatively influences the overall size of the financial system.
- Nominal returns on financial assets positively influence the overall size of the financial system.

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* In the preparation of this paper, the author benefitted from valuable discussions with Alan Gelb, James Hanson, Millard Long, Roberto Rocha, Alain Soulard, and Dimitri Vittas of the World Bank and Warren Coats and Dan Villanueva of the IMF.

- Since the inflation response is quantitatively more negative than the deposit-rate response is positive, maintaining the size of the financial system at high rates of inflation by raising deposit rates requires sustaining exceptionally high real deposit rates.[1]

Data

2. Before proceeding to the data and data sources, the reader should be aware of a semantic stumbling point of work in the financial area, that is: one agents asset's are another's liabilities. Thus, depending on the perspective (i.e., the lender's or the borrower's) or on common usage, financial instruments may be referred to either as assets or liabilities. Whenever possible, the term "financial instruments" will be used. However, to keep terminology consistent with data sources and common usage, the terms "asset" and "liability" may used for the same instrument.

3. The data are predominantly from the World Bank's Economic and Social Database system (BESD), with per capita income data from the *World Bank Atlas*. Deposit rate data are supplemented with data from central bank publications and World Bank and IMF staff. The data cover a subset of countries identified in the BESD system as "All Low Income," "All Middle Income," and "OECD" countries. The subset consists of one hundred seventeen countries. These were selected strictly on the basis of data availability for the year 1985. The year 1985 was selected as the best compromise between currency and availability.[2]

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1 Estimates discussed later in the paper suggest that at an inflation rate of 100% per annum, real deposit rates need to be over 200% p.a. to fully offset the corrosive effect of inflation on the size of the financial system. Alternatively, estimates suggest that maintaining 0% real deposit rates in the face of 100% inflation rather than 0% inflation would reduce financial depth to less than half of the 0% inflation level.

2 Since the US$ was particularly volatile during this period, the analysis of exchange rates uses the SDR instead.

4. The data include the ratios of the stocks of the following financial instruments to gross domestic product (GDP):

- *Money*—generally the sum of currency held outside of banks and demand deposits in the commercial banks, i.e., M1.

- *Liquid Liabilities of the Financial System*—generally Money, plus interest bearing liabilities of the commercial banks, plus demand and interest bearing liabilities of the "non-bank" financial intermediaries (savings banks, postal savings systems, finance companies, etc.)

- *Quasi-Liquid Liabilities of the Financial System*—Liquid Liabilities net of Money, i.e., interest bearing liabilities.

For any given country, the specific data definitions used are from the International Monetary Fund's *International Financial Statistics (IFS)*, which is the underlying data source. These definitions are embodied in: *IFS* line 34, for Money; line 55l, for Liquid Liabilities of the Financial System; and, where Liquid Liabilities are not defined in the *IFS*, they will be defined as the sum of Money, line 34, and Quasi-money, line 35 (i.e., M2).[3] The gross domestic product (GDP) data at market prices are from the World Bank International Economics Department's *National Accounts Database.* Per capita income data are from *The 1988 Update of the 1987 World Bank Atlas.*

5. In this study, the problem of deflating the financial stocks by the GDP flow is handled by taking the arithmetic average of five quarters of stock data and dividing it by the GDP flow. The five quarters are the 1984-Q4, 1985-Q1, 1985-Q2, 1985-Q3, and 1985-Q4, where year refers to the national income accounting year, which, in some countries, differs from the calendar year. The five-quarter approach attempts to limit distortions in financial stocks introduced by inflation and seasonality. Specifically, the last quarter of the previous year is included in the average to further limit inflation bias over

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[3] Money, quasi liquid liabilities, and liquid liabilities are financial liabilities of financial institutions (i.e., the central bank, the commercial banks, and the "non-bank" financial intermediaries) and are held as assets by the public.

and above a four quarter average, which limits inflation and seasonality biases present in a single observation.

Note: With a perfectly steady nominal growth rate of one hundred percent per annum, the four-quarter average of 1985-Q1 through 1985-Q4 stocks is 57% larger than the initial level, whereas the five-quarter average of 1984-Q4 through 1985-Q4 stocks is 46% larger. In comparison, the second quarter a stock is 41% larger than the initial level, given the same one hundred percent growth rate. With a growth rate of twenty-five percent per annum, the four-quarter average is 15% larger than the initial level, the five-quarter average is 12% larger, and the second quarter level is 12% larger. Clearly, the five-quarter average more closely approximates stocks in "mid-year" (second quarter) prices than the four-quarter average. This feature becomes important at high rates of growth (inflation), since the four-quarter average increasingly diverges from the "mid-year" stock.

6. The data also include the following key financial prices

- *Deposit Rates*—generally the nominal rate on term deposits in commercial banks with maturities between three months and one year.

- *Inflation Rates*—the rate of change in consumer prices between the end of 1984 and the end of 1985.

- *Devaluation Rates*—the rate of change in the local currency–per–SDR market exchange rate between the end of 1984 and the end of 1985.

As with the financial stock data, the actual definitions are those used in the International Monetary Fund's *International Financial Statistics*, from which the data come. These definitions are embodied in: *IFS* line 60l, for deposit rates; line 64, for consumer prices; and line ..aa for SDR exchange rates. As before, end-of-year refers to the end of the national income accounting year.

Basic Theory

7. Briefly, the underlying theory for this analysis goes as follows:

- The financial system provides intermediation services to an economy by coördinating resource flows from surplus economic units to deficit units, e.g., between savers and investors.

- Formal financial systems, with their economies in information processing and risk-pooling, are generally more efficient intermediaries than informal or traditional systems.

- Controlling for allocational efficiency (i.e., effectiveness in selecting the most economically productive investments), the size of the formal financial system relative to the scope of economic activity—*financial depth* should be positively related to economic performance.

- Formal financial instruments denominated in domestic currency are only one form of wealth; others include physical assets and financial instruments denominated in foreign currencies. Thus, the relative prices of alternative instruments influence the profile of wealth holdings and, accordingly, the depth of the financial system.

- In a world of imperfect information, imperfectly mobile factors, and cultural diversity, the profile of wealth holdings can be expected to vary across geographical regions and countries. Thus, in addition to being influenced by the relative price of other instruments for holding wealth, financial depth can be influenced by institutional factors, including a country's overall level of development.

Methodology

8. Simple methodologies are employed for this analysis. Descriptive statistics and a few ordinary least-squares regressions are used to: i) examine

the determinants of financial depth and ii) establish an overall quantitative framework for further investigations in the macro-financial area.

9. The data are grouped by per capita income levels and by geographical regions. The per capita income (PCY) groups include: Low, for 1986 PCY below US$450; Middle, for PCY between US$450 and US$3,000; High, for PCY between US$3,000 and US$7,200; and Advanced for PCY above US$7,200. The geographical groups include: Sub-Saharan Africa; the Caribbean; East Asia; Europe, the Middle East and North Africa; Latin America; and South Asia.[4] The seventh "geographical" region is the Industrial Countries, which comprise the OECD countries with PCY above US$7,200. These groupings permit the analysis of the importance of national wealth (or, more generally, development) and institutional factors associated with geographic location, such as worker remittances, usury customs, regional markets, etc.

10. Single equation, ordinary least squares regressions are used to explain the ratio of liquid liabilities to GDP by the weighted real rate of return on financial assets, the real rate of devaluation, and per capita income (a proxy for wealth) as a scale variable.[5] The weighted real rate of return is the weighted nominal rate of return deflated by the rate of inflation. The weighted nominal return is formed assuming that all monetary instruments pay no interest and all non-monetary instruments have an interest rate equal to the single deposit rate. The weights are equal to the monetary and non-monetary shares of total liquid liabilities, respectively. A second formulation separates the price variables into inflation, the weighted nominal return, and the nominal devaluation rate. This permits the investigation of the separate influences of the two components of the real return—the weighted nominal return and inflation.

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4 For this analysis, Pakistan is included in the South Asian group. See the Countries by Region table in the Annex for a list of the regional breakdowns and per capita income.

5 This specification of the regressand implicitly assumes that at any given level of wealth and array of prices, the long-run desired portfolio mix between financial, real, and foreign currency denominated assets is independent of the rate of economic activity. Given the number of factors which could influence the relationship between desired portfolio mix and activity level, whether or not such neutrality exists is an empirical question, which this data set unfortunately cannot resolve. The assumption of neutrality is maintained for the sake of simplicity. Also, note that with three alternative assets—financial, real, and foreign currency denominated—two prices regressors are required. In this specification, real assets are the numeraire.

11. Expectations are handled in a very simple manner. Inflation and devaluation data are, respectively, the ex-post changes in the consumer price level and the market exchange rate from the end of the 1984 to the end of 1985. Since the financial stock data are five quarter averages and, thus, more-or-less mid-year stocks, inflation and devaluation data represent expectations that are roughly an average of static expectations and perfect foresight. Since deposit rates are the geometric average of four quarters of ex-post data, interest rate expectations are assumed to be perfect foresight. Admittedly, the assumptions behind the expectations modeling are overly strong. However, in the absence of clearly superior and readily available price expectations data, these assumptions will have to suffice for this analysis.

12. Regressions are also run for the ratios of quasi-liquid financial assets to GDP and M1 to GDP, with inflation, the nominal deposit rate, devaluation, and per capita income as explanatory variables.[6] In addition to illuminating the determinants of monetary and non-monetary aggregates, these regressions can shed light on the determinants of the total financial aggregate, by revealing potentially conflicting influences upon the constituent parts or by revealing which component is producing the effect seen in the total.

13. To capture institutional and economic effects associated with geographic location, binary variables are introduced into each of the regressions representing the seven geographic regions. Admittedly, this a crude way of modeling such effects. As well, some theft of explanatory power from per capita income and the financial price variables can be expected, since these variables are somewhat correlated with geographical location. However, to the extent that countries in the same geographical region share institutional and economic features, introducing regional binary variables is a simple and useful way of characterizing their influence on financial depth.

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6 As with the liquid liabilities regression, neutrality of the rate of economic activity in the desired long-run portfolio mix is assumed. Also note that with four alternative assets—monetary, non-monetary financial, real, and foreign currency denominated—three prices are required. In this case, monetary assets are the numeraire.

14. Since all variables, except the binary ones, are expressed in logarithms, the coefficient estimates can be interpreted as elasticities.[7] However, the coefficient estimates and their statistical significance must be interpreted with care, since, econometric problems with specification and measurement errors can bias the coefficient estimates and reduce the power of the T-tests of statistical significance for the estimated coefficients. Nevertheless, the sample is a very large fraction of the underlying population (i.e., nearly all non-COMECON countries). Accordingly, the results give a fairly reliable picture of the relationships between the financial stocks, the financial prices, per capita income (wealth), and other institutional factors.

Analysis

15. The following summary tables present a broad-brush description of the financial systems in the one hundred seventeen sample countries. To avoid confusion, note that deposit rates refer to interest rates on interest bearing deposits, whereas weighted returns are averages of the return to interest bearing deposits and the return to non-interest bearing assets.[8]

16. Table 1 establishes some macro-financial benchmarks for use in other studies in the macro-financial area. Table 1 also highlights the mean statistic's sensitivity to observations with large absolute values, by displaying both the values for the arithmetic means and medians. Note that the median per capita income is nearly two thirds smaller than the mean. In general, the distortion is not nearly so great; nevertheless, care should be exercised in interpreting and comparing means, particularly when large outlyers exist in small samples.

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7 The inflation, deposit, weighted real return, and devaluation rates are expressed as price ratios. For example, a twenty percent per annum rate of devaluation is expressed as 1.20, i.e., the ratio of the exchange rate at the end of 1985 to the exchange rate at the end of 1984. Accordingly, an increase of one percentage point in the devaluation rate from 20 to 21% constitutes an increase of only .83 percent for calculations exploiting the elasticity estimates.

8 By assumption, all non-monetary instruments yield the single deposit rate for each country collected for the study and all monetary instruments (i.e., currency and demand deposits) pay no interest—a gross, but workable, simplification.

Table 1
Financial Depth and Financial Price Indicators
Arithmetic Means and Medians: Full Sample
(rates in percent per annum)

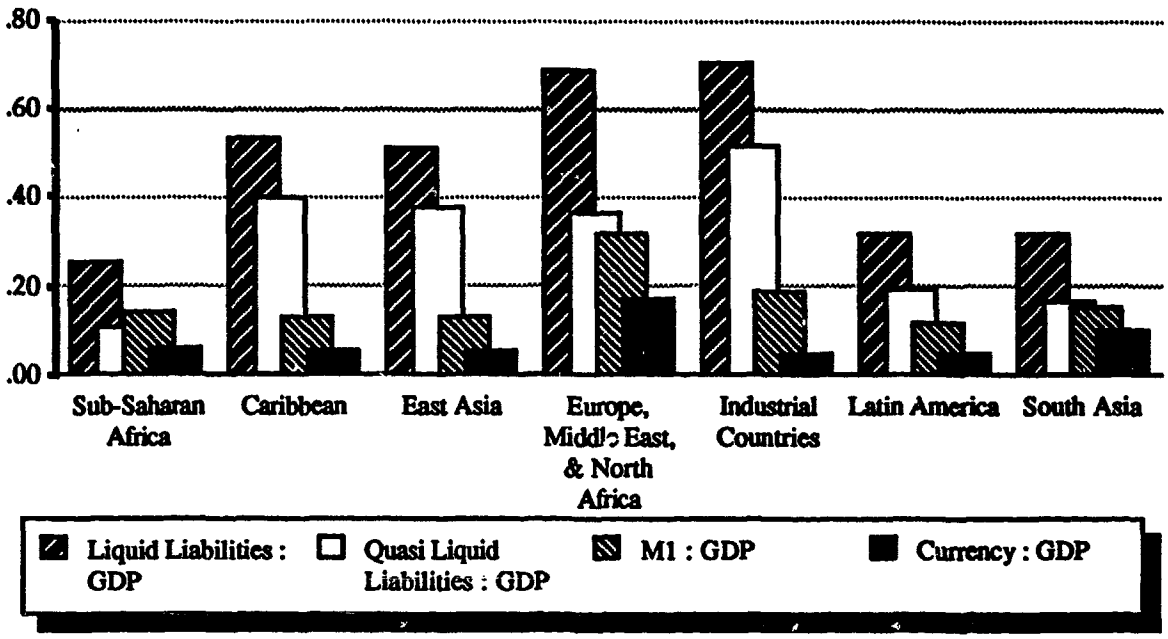
	Mean	Median
Liquid Liabilities : GDP	.459	.389
Quasi Liquid Liabilities : GDP	.285	.199
M1 : GDP	.174	.140
Currency : GDP	.077	.055
Real Deposit Rate	0.1	2.1
Weighted Real Return	-4.4	-1.8
Inflation Rate	22.0	7.7
Devaluation Rate vs SDR	28.2	8.4
Real Devaluation vs. SDR$	3.9	2.8
17. Per Capita Income US$	3,040	1,130

Means

18. Figure 1 and Figure 2 display arithmetic means of the financial depth indicators grouped by region and by income level, respectively. Table 2 and Table 3 display arithmetic means of financial prices, also grouped by region and by income level, respectively. Within the confines of what simply comparing means can reveal, these figures and tables offer some quantitative picture of how key macro-financial indicators vary across regions and income levels.

19. Figure 1 reveals a fair degree of heterogeneity across regions in overall financial depth (liquid liabilities : GDP) and non-monetary depth (quasi liquid liabilities : GDP). Sub-Saharan Africa, South Asia, and Latin America are financially and non-monetarily "shallow," whereas the Caribbean, East Asia, Europe, the Middle East, and North Africa, and the Industrial Countries are deep. Overall financial depth seems to be correlated with per capita income (a proxy for wealth or development).

Figure 1
Financial Depth Indicators
Arithmetic Means by Regions



20. Figure 1 also reveals a fair degree of homogeneity across regions in monetary depth (M1 : GDP) and currency depth (currency : GDP), with the exception of the Europe, Middle East and North Africa region, which is exceptionally deep in currency and M1. The Industrial Countries are also monetarily deep.

21. The relative monetary depth of the Industrial Countries is somewhat surprising. Conventional wisdom holds that as financial systems become more sophisticated, the appearance of higher yielding but sufficiently liquid alternatives to monetary instruments permits the public to economize on monetary balances. Accordingly, the Industrial Countries would be expected to be monetarily shallow rather than deep. One possible explanation is that financial development tends to blur the distinctions between banks and non-bank financial intermediaries and between demand deposits and time and

savings deposits. In some countries, this has led to the use of broader definitions of monetary instruments than those applied in less developed financial systems. The inclusion, for example, of interest-bearing transferable deposits in mortgage institutions in the monetary aggregate of some of the Industrial Countries could help account for that group's monetary depth. Alternatively, weak competition between banks in rich countries, could skew the mix of financial instruments towards monetary instruments (a low cost source of bank funds), which, in combination with the greater overall financial depth of rich countries, could produce higher M1 to GDP ratios.[9]

22. Europe, Middle East and North Africa region's extraordinary currency and monetary depth displayed in Figure 1 largely reflects extreme depth in six Arab and North African countries.[10] In three of these countries: Algeria, Egypt, and Syria, extensive price controls, worker remittances, and financing of large public sector deficits have combined to leave the public with large monetary balances that it cannot work down. In Egypt, this has contributed to massive holdings of foreign currency deposits, many of which are counted in the monetary aggregate. In the Arab Republic of Yemen, massive imports relieved the pressure on domestic prices generated by the public sector deficits. Currency and monetary depth in Jordan and Malta are more mysterious. Public sector budgets in both countries remained in rough balance, although remittances were an important source of liquidity in Jordan. Both countries employed price and import controls, but neither to an extent that could adequately explain Jordan's currency to GDP ratios of 35% or Malta's 58%.

23. At the other end of the spectrum, six sample countries: Argentina, Brazil, Israel, Mexico, the Philippines, and Uruguay had M1 to GDP ratios of less than 6%. Since, with exception of the Philippines, these countries are among the ten most inflationary countries in the sample, including the most

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9 Belgium, Denmark, France, and Italy all have M1 to GDP ratios in excess of 20% and M1 to Liquid liabilities ratios over 35%. Japan, the Netherlands, and Switzerland have M1 to GDP ratios in excess of 20%, but have M1 to GDP ratios less than 25%. Ascribing either competitive or definitional causes to the high level of monetary depth in these countries would require further investigation.

10 For the following countries, the currency to GDP and M1 to GDP ratios are: Algeria, 25% and 66%; Egypt, 19% and 33%; Jordan, 35% and 58%; Malta, 58% and 67%; Syria, 34% and 61%; and Arab Republic of Yemen, 62% and 76%.

inflationary three, it appears that high inflation motivates the public to economize their monetary balances. With the exceptions of Israel and Uruguay, both of which have large foreign currency deposits included in their overall financial aggregates, these countries are also financially shallow in comparison to the full-sample mean and the means of their respective regions. This shallowness reflects an inflation-induced flight from the financial instruments encompassed by the *IFS* data definitions to other assets. Commonly these other assets include inflation or exchange rate indexed bonds and government securities.[11]

Table 2
Financial Prices and Per Capita Income
Arithmetic Means by Region
(rates in percent per annum)

	Sub-Saharan Africa	Caribbean	East Asia	Europe, Middle East, & North Africa	Industrial Countries	Latin America	South Asia
Real Deposit Rate	-3.5	1.6	5.5	0.0	2.0	-4.5	3.4
Weighted Real Return	-8.8	-0.7	2.4	-4.3	-0.2	-8.9	-.09
Inflation Rate	17.4	7.5	5.4	27.4	6.4	76.7	6.3
Devaluation Rate vs SDR	24.5	29.0	12.6	24.3	-0.4	95.3	7.5
Real Devaluation Rate vs SDR	4.9	17.8	6.9	-2.5	-6.4	8.1	1.3
Per Capita Income US$	686	2,350	1,961	2,559	12,390	1,519	257
Sub-sample size	36	12	13	18	17	15	6

24. Table 2 indicates that mean real interest rates and weighted real return on financial assets differ across regions. For real deposit rates, Latin America and Africa have a clearly negative means. In the Europe, the Middle East and

11 As the regression analysis presented later in the paper suggests, the risk premium required to maintain financial balances at high levels of inflation generates such high real interest rates that some form of indexed or foreign currency denominated instruments becomes necessary to keep the financial system from withering.

North Africa region mean real deposit rates are around 0% p.a. The rest are positive and range between the Caribbean at 1.6% to East Asia at 5.5% p.a. For the weighted real returns, means in Africa, Latin America, and Europe, the Middle East and North Africa are clearly negative. As a result, in these regions, over a year, wealth equal to about 2.5% of GDP is being transferred from financial asset holders through the banking system. Typically, the government, preferential credit recipients, and bank owners are the beneficiaries of these transfers. In the other regions, weighted real returns are approximately zero, with the exception of East Asia, which by virtue of low inflation has a weighted real return of 2.5% p.a. An analysis of variance supports the heterogeneity of the weighted returns across regions, but not of the real deposit rate. Specifically, the hypotheses that the underlying population means are equal across all the regions can be rejected at the 1% level for the weighted real return. However, this hypothesis cannot be rejected at even the 10% level for the real deposit rate.

25. Although the homogeneity of the real deposit rate across regions might suggest some sort of law of one price or interest rate parity condition, Table 3 shows that the real deposit rate varies across income groups. This heterogeneity is supported by an analysis of variance, i.e., the hypothesis that the population means are equal for each of the four income groups can be rejected at the 5% significance level. Since real deposit rates rise from negative 4% p.a. in the low income group to positive 1% in the middle income group, to 4% in the high income group, but fall to positive 2% p.a. in the advanced countries, any explanation entailing international market forces equilibrating real deposit rates would have to account for the rise and fall of real rates as per capita income is increased.

26. Of course, variation in real rates across income groups does not preclude the possibility that international market forces are unifying deposit rates across countries. International capital flows could drive nominal interest rates, adjusted for the rate of devaluation, towards equality, However, analyses of variance for the devaluation-adjusted nominal deposit rate[12] can reject, at the 5% confidence level, the hypotheses that the

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12 As price ratios, the nominal deposit rate divided by the devaluation rate, i.e., the rate of return, in SDRs, of domestic deposits.

population means are equal across either regions or across income groups. These results suggests that international market forces are not unifying interest rates globally. However, to pursue this line of investigation further, an analysis of *risk-adjusted,* devaluation-adjusted, nominal deposit rates would be required. Such an analysis is beyond the scope of this paper.

Table 3
Financial Prices and Per Capita Income
Arithmetic Means by Per Capita Income Level
(rates in percent per annum)

	Low <US$450	Middle US$450-3,000	High US$3,000-7,200	Advanced >US$7,200
Real Rate on Deposits	-4.3	1.4	3.7	2.0
Weighted Real Return	-9.9	-3.7	1.5	-0.2
Inflation Rate	18.6	28.6	23.5	6.4
Devaluation Rate vs SDR	23.4	41.6	20.7	-0.4
Real Devaluation Rate vs SDR	2.9	9.0	-2.2	-6.4
Per Capita Income US$	266	1,339	5,221	12,390
Sub-sample size	33	55	12	17

27. Judging from Table 3, countries in the middle income group appear most prone to high inflation. One possible explanation is that in middle income countries the demand for public services, which tends to rise with income level (see the Structure of Demand table in the data annex to The World Bank's *World Development Report*), might outstrip the authorities abilities to collect revenues in this range of economic development. However, an analysis of variance cannot reject the hypothesis that mean inflation is equal across income groups, as it can across regions. Moreover, Table 5 shows that the correlation between per capita income and inflation varies widely across regions, both in sign and magnitude. Thus, inflation

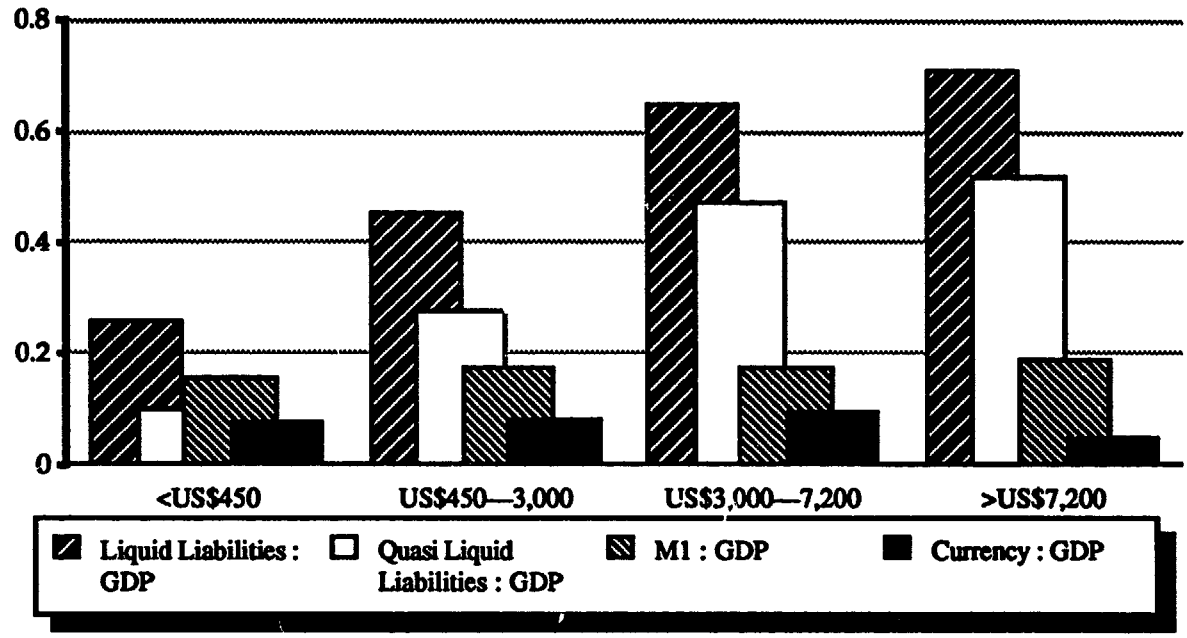
seems explained better by political and economic factors correlated with geographical location than by per capita income.

28. Whereas inflation does not appear to be a per capita income related phenomenon, real deposit rates and weighted real returns do appear to be per capita income related, since analyses of variance can reject the hypotheses of equal means across per capita income classes at the 5% level. This suggest that the level of financial development is a determinant of what interest rate policies can be sustained, either by governments or by financial oligopolies, or of what level of interest rates will clear markets.

29. Figure 2 shows strong, positive correlations between per capita income and overall financial depth, and between income and non-monetary depth. Monetary depth is relatively constant across income groups. This accords with the conventional assessment of monetary balances being held for transactional purposes and generally not as an asset for storing accumulated wealth. Currency depth is also fairly constant across income groups, except for the advanced group where it is down sharply. This reflects a greater reliance on demand deposits for making transactions in more financially developed economies.

30. The strong positive correlation between per capita income and financial depth suggests that the relative expansion of the formal financial system is a part of the development process. Tables 4 and 5, which display Pearson correlation coefficients for a selection of indicators, also generally reflect the positive correlation between income and financial depth. Of course, causality can flow in both directions. Development entails wealth accumulation and wealth can be increasingly held in financial form. Conversely, increasing the formal financial system's management of resource flows can result in more efficient intermediation and investment selection, thus leading to faster growth and greater wealth. Unfortunately, the data are inadequate to determine the extent to which either of these forces are operative.

Figure 2
Financial Depth Indicators
Arithmetic Means by Per Capita Income Group



Correlations

31. Tables 4, 5, and 6 display Pearson correlation coefficients for a selection of indicators. Table 4 displays them for the entire one hundred seventeen country sample, Table 5 by regions, and Table 6 by income groups. They provide information on the relations between monetary and non-monetary financial instruments, relations between these instruments and key financial prices, and relations between the financial prices.

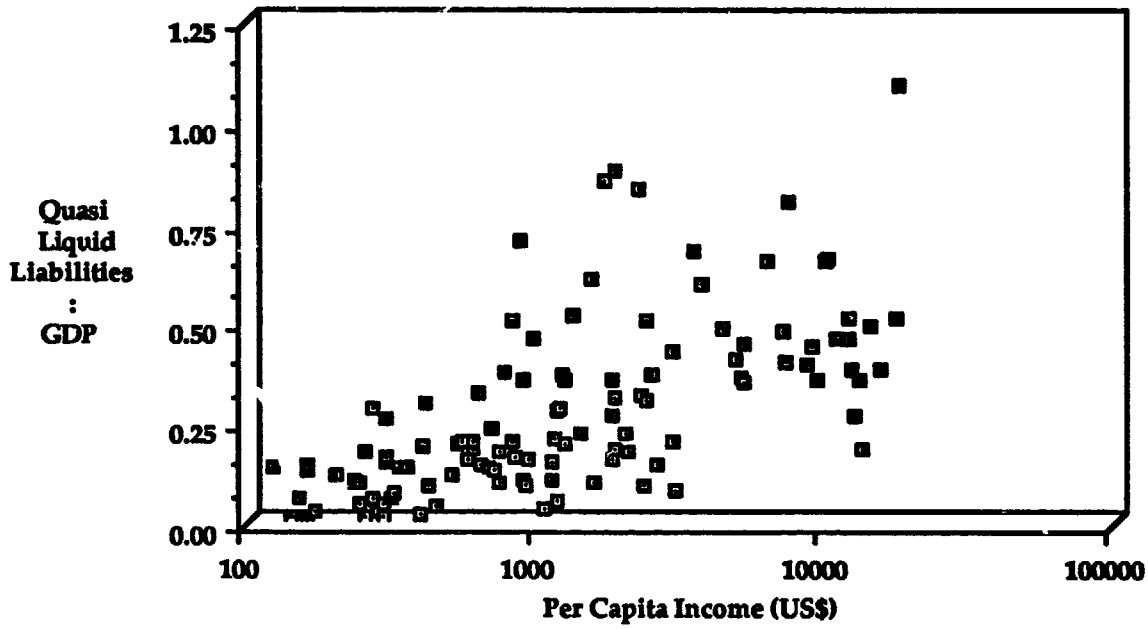
32. Table 4 shows fairly strong correlations between overall financial and monetary depth, between overall financial depth and per capita income, and between non-monetary financial depth and per capita income (see Figure 3). High correlations exist between inflation and devaluation, and between inflation and the nominal deposit rate. All these correlations are positive.

Table 4
Pearson Correlation Coefficients
Full Sample

	Pearson Correlation Coefficient
Liquid Liabilities : GDP vs. M1 : GDP	.6
Liquid Liabilities : GDP vs. Weighted Real Return	.4
Liquid Liabilities : GDP vs. PCY	.5
Quasi Liquid Liabilities : GDP vs. M1 : GDP	.2
Quasi Liquid Liabilities : GDP vs. Real Deposit Rate	.3
Quasi Liquid Liabilities : GDP vs. PCY	.6
M1 : GDP vs. Inflation	-.2
M1 : GDP vs. Nominal Deposit Rate	-.2
M1 : GDP vs. PCY	.0
Inflation vs. Devaluation	.9
Inflation vs. Nominal Deposit Rate	.9

33. The positive correlation between overall financial and monetary depth is not at all surprising, since overall depth is the sum of monetary and non-monetary depth. The relatively low correlation between monetary and non-monetary depth is notable. This is consistent with the view that monetary instruments are primarily maintained for transactions purposes and non-monetary financial instruments are maintained for wealth purposes and there is substantial independence between the two motives. To the extent that per capita income proxies wealth, the fairly strong correlation between non-monetary depth and per capita income, on the one hand, and the very low correlation between monetary depth and per capita income, on the other hand, also support this interpretation. The small positive correlation between monetary and non-monetary depth could reflect either an across-the-board shift from traditional to formal financial instruments, or the waxing and waning of public confidence in the formal financial system in general and, thus, its willingness to hold formal financial instruments.

Figure 3
Non-Monetary Depth vs. Per Capita Income

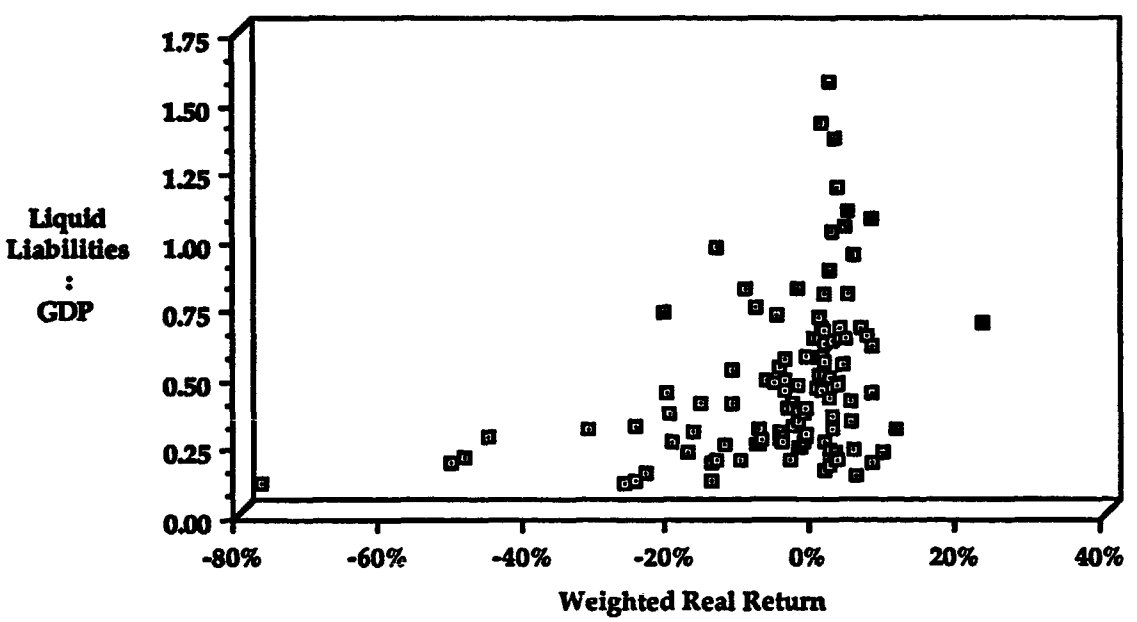


34. With monetary depth weakly correlated with both per capita income and non-monetary depth, it is clear that the positive correlation between overall financial depth and per capita income is primarily a result of the correlation between non-monetary depth and per capita income. Looking back to Figure 1, one can see that, with the exception of the Europe, Middle East, and North Africa region, overall financial depth is largely due to non-monetary depth. Thus, increasing "domestic resource mobilization" by increasing overall financial depth comes largely through the expansion of interest-bearing instruments. Because monetary liabilities are generally much less costly resources for the formal financial system than interest bearing liabilities, the balance sheets of the formal financial institutions increasingly become a concern for policy-makers as greater emphasis is placed on deepening the domestic financial system. Accordingly, interest rate policies on lending rates need to be made consistent with any program aimed at increasing domestic resource mobilization.

35. Table 4 also shows generally mild correlations between the depth indicators and the financial price indicators. Overall financial depth versus

the weighted real return on the constituent financial instruments is plotted in Figure 4. Whereas the positive correlation is evident in Figure 4, the countries with highly negative returns are largely responsible. The majority of the countries cluster in a vertical band above zero percent p.a. Together with earlier analysis, this suggests that financial prices may not be the dominant factor in determining financial depth. Instead more complicated processes are probably at work. The regression analysis presented in the next section attempts to unravel some of this complexity.

Figure 4
Financial Depth vs. Weighted Real Return



36. The high correlations between inflation and devaluation and between inflation and the nominal interest rate displayed in Table 4 indicate that, in countries where the government sets interest and exchange rates, policy-makers set these prices to keep them more or less in line with changes in goods prices. Where interest and/or exchange rates are set in the market, they appear to equilibrate roughly in line with developments in goods prices.

Table 5
Pearson Correlation Coefficients
by Region

	Sub-Saharan Africa	Caribbean	East Asia	Europe, Middle East, & North Africa	Industrial Countries	Latin America	South Asia
Liquid Liab. : GDP vs. M1 : GDP	.6	.5	.6	.7	.6	.9	.6
Liquid Liab. : GDP vs. Weighted Real Return	.2	.7	.3	.3	.3	.6	-.1
Liquid Liab. : GDP vs. PCY	.2	.1	.5	.0	.2	.5	.3
Quasi Liquid Liab. : GDP vs. M1 : GDP	.1	.4	.4	-.2	.4	.7	-.2
Quasi Liquid Liab. : GDP vs. Real Deposit Rate	.2	.5	.1	.6	.1	.4	.0
Quasi Liquid Liab. : GDP vs. PCY	.3	.1	.5	.5	.3	.6	.4
M1 : GDP vs. Inflation	-.1	-.7	-.3	-.4	-.2	-.5	-.1
M1 : GDP vs. Nominal Deposit Rate	-.4	-.2	-.7	-.4	-.3	-.4	-.4
M1 : GDP vs. PCY	-.2	-.3	.1	-.4	-.1	.4	.1
Inflation vs. Devaluation	.7	.8	.1	1.0	.6	1.0	-.5
Inflation vs. Nominal Deposit Rate	.5	.7	.3	1.0	.9	1.0	-.6
Sub-sample size	36	12	13	18	17	15	6

37. Tables 5 and 6, which display the correlations grouped by region and by income level, are generally consistent with the correlations for the full sample displayed in Table 4. Nevertheless, the correlations across income group shown in Table 6 more closely resemble those in the full sample than the correlations across regions shown in Table 5. Although this, in part, may be due to the smaller sub-samples on which the regional results are based, the greater variance in the correlations from the full-sample results may indicate that macro-financial behavior is region-specific.

Table 6
Pearson Correlation Coefficients
by Per Capita Income Level

	Low <US$450	Middle US$450-3,000	High US$3,000-7,200	Advanced >US$7,200
Liquid Liab. : GDP vs. M1 : GDP	.7	.7	.8	.6
Liquid Liab. : GDP vs. Weighted Real Return	.3	.3	.2	.3
Quasi Liquid Liab. : GDP vs. M1 : GDP	.2	.1	.4	.4
Quasi Liquid Liab. : GDP vs. Real Deposit Rate	.1	.3	.3	.1
M1 : GDP vs. Inflation	-.2	-.2	-.3	-.2
M1 : GDP vs. Nominal Deposit Rate	-.5	-.2	-.3	-.3
Inflation vs. Devaluation	.7	.9	1.0	.6
Inflation vs. Nominal Deposit Rate	.5	1.0	1.0	.9
Sub-sample size	33	55	12	17

Regressions

38. Table 7 displays coefficient estimates for a set of ordinary least squares regressions on the three financial depth variables. The first equation regresses overall financial depth (Liquid Liabilities : GDP) on the weighted real return, real devaluation, and per capita income. The second and third equations regress non-monetary depth (Quasi Liquid Liabilities : GDP) and monetary depth (M1 : GDP) on the nominal deposit rate, inflation, nominal devaluation, and per capita income. In each of these regressions, binary variables for six of the regions are included to capture effects associated with geographical location.[13] All the non-binary variables are expressed in

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13 The seventh region, Europe, the Middle East and North Africa, is represented by the constant variable. Thus, the coefficient estimates for the other regions represent differences from the mean of the Europe, the Middle East and North Africa region.

logarithms, thus the coefficient estimates can be interpreted as elasticities. Statistical significance at the 10% level is indicated by *. Statistical significance at the 5% level is indicated by **.

Table 7
Regression Results
Full Sample

	Liquid Liabilities : GDP		Quasi Liquid Liabilities : GDP	M1 : GDP
Constant	-1.31**		-4.17**	-0.60
Weighted Real Return	1.08**	Nominal Deposit Rate	0.86	-1.33**
Real Devaluation vs. SDR	-0.15	Inflation	-1.83**	0.25
		Nominal Devaluation vs. SDR	0.43	-0.30
Per Capita Income (Wealth)	0.12**		0.41**	-0.08
Africa = 1	-0.73**		-0.79**	-0.79**
Caribbean = 1	-0.26		0.10	-0.73**
East Asia = 1	-0.36**		0.04	-0.83**
Industrial Countries = 1	-0.22		-0.35	-0.37**
Latin America = 1	-0.68**		-0.38	-0.57**
South Asia = 1	-0.48**		0.08	-0.77**
Adjusted-R^2	.52		.58	.46
Sample Size	117		117	117

39. The three regressions in Table 7 perform respectably well Each explains approximately half of the variation in the dependent variables and gives coefficient estimates that are generally as expected. A number of the financial price variables are statistically significant and have the expected signs. As a proxy for wealth, per capita income appears to be an important determinant of overall financial and non-monetary depth. However, per capita income is not a statistically significant determinant of monetary depth. Economic factors associated with geographical location are key determinants of monetary, non-monetary and overall financial depth.

40. From a policy perspective, it is important to note that the overall depth of the financial system is positively influenced by the weighted real return on the constituent financial instruments. Since the weighted real return comprises the weighted nominal return and inflation, each of which is a different potential policy variable, it is important to determine whether both components are driving this result. If not, then it is important to determine which component is. The regressions displayed in Table 8, in which financial depth is regressed on the weighted nominal return, inflation, and nominal devaluation, shed some light on this question.

41. Although the results for the non-monetary and monetary depth regressions presented in Table 7 are supportive of the results obtained for the overall aggregate, they are not completely clear on which policy variable is driving the weighted real return's influence on the overall aggregate. The fact that, using essentially the same regressors, the regressions for the two components of the overall aggregate explain roughly the same amount of variation as the overall regression and that for the two component equations, the regressors are generally statistically significant with the expected signs, supports the specification for the overall financial depth equation. The large, statistically significant, negative coefficient estimate for inflation in the non-monetary depth regression and the small, statistically not significant elasticity for inflation in the monetary depth equation both suggest that inflation is at least one of the policy variables driving the positive influence of the weighted real return on the overall financial depth. However, the fairly large, statistically significant, negative elasticity for the nominal deposit rate in the monetary depth equation and the moderate, but statistically not significant, elasticity in the non-monetary depth equation are ambiguous with respect to the nominal return's role in influencing the overall financial depth through the weighted real return.

42. Judging from the statistically significant, negative coefficient estimate for nominal deposit rates in the monetary depth equation, raising rates induces the public to economize on its monetary balances, presumably by shifting them into non-monetary financial instruments. However, the absence of a statistically significant, positive elasticity for nominal deposit rates in the non-monetary regression casts some doubt on this hypothesized

behavior. Nevertheless, since the elasticity estimate is of the proper sign and of reasonable size, the lack of statistically significance may not be too damning of this hypothesis. Instead it may simply reflect the limitations of regression analysis. The question of the role of nominal returns in the weighted real return's influence on overall financial depth simply requires further exploration.

43. The absence of identifiable impacts of devaluation on any of the depth variables may be attributable to limited access to foreign currency denominated assets in many of the sample countries.[14] Alternatively, it could reflect problems proxying devaluation expectations, given that devaluation is often discontinuous and abrupt, in contrast to generally continuous changes in domestic goods prices. In such circumstances, successful speculation against the central bank requires that moves in and out of foreign currency denominated assets be timed around these abrupt exchange rate changes. Thus, depending on when the changes occur during the year, annual averages of balances of domestic currency denominated instruments may be higher or lower, for the same change in end-of-year to end-of-year exchange rates.[15]

44. The absence of an inflationary impact on monetary assets can be attributable to either supply effects (i.e., price inflation caused or sustained by monetary emission) or, on the demand side, to a lack of suitable real asset substitutes for monetary instruments in transactions. Without suitable alternatives, the public will try to sustain its monetary balances roughly in

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14 The inclusion of foreign currency denominated instruments in the financial aggregates could also reduce the likelihood of finding a devaluation effect. However, out of the 117 sample countries, few have this problem to any appreciable degree. Moreover, previous work by the author using time-series data that was purged of all known foreign currency denominated instruments also gave no indication of devaluation effects (James Hanson and Craig Neal, "The Demand for Liquid Financial Assets: Evidence from 36 Developing Countries." unpublished discussion paper, January 1987).

15 The results are not sensitive to the use of data for devaluation versus the US$ rather than the reported devaluation versus the SDR.

Table 8
Regression Sensitivity Analysis — 1
Dependent Variable—Liquid Liabilities : GDP

	Full Sample	Full Sample *sans* Caribbean	Full Sample *sans* East Asia	Full Sample *sans* Europe, Middle East, North Africa	Full Sample *sans* Industrial Countries	Full Sample *sans* Latin America	Full Sample *sans* South Asia	Full Sample *sans* Sub-Saharan Africa
Constant	-1.42**	-1.42**	-1.10**	-1.94**	-1.53**	-1.32**	-1.40**	-1.53**
Weighted Nominal Return	0.55	0.48	0.65*	0.38	0.49	0.54	0.58	1.25**
Inflation	-1.03**	-1.17**	-1.04**	-0.87*	-0.95**	-0.91*	-1.05**	-1.70**
Nominal Devaluation vs. SDR	-0.07	0.12	-0.11	-0.12	-0.06	-0.07	-0.07	-0.16
Per Capita Income (Wealth)	0.14**	0.14**	0.10*	0.17**	0.16**	0.13**	-0.14**	0.16**
Sub-Saharan Africa = 1	-0.76**	-0.77**	-0.82**	-0.38	-0.74**	-0.78**	-0.76**	
Caribbean = 1	-0.28*		-0.28*	0.08	-0.27*	-0.27	-0.28*	-0.30*
East Asia = 1	-0.40**	-0.41**		-0.03	-0.38**	-0.39**	-0.40**	-0.44**
Industrial Countries = 1	-0.31*	-0.30*	-0.24			-0.27	-0.31*	-0.39**
Latin America = 1	-0.59**	-0.61**	-0.60**	-0.21	-0.59**		-0.59**	-0.52**
South Asia = 1	-0.48**	-0.49**	-0.57**	-0.08	-0.45*	-0.50**		-0.47**
Adjusted-R^2	.55	.55	.59	.53	.52	.53	.56	.51
Sample Size	117	105	104	99	100	102	111	81

* indicates significance at the 10% level

** indicates significant at the 5% level

line with its transaction needs. That nominal deposit rates negatively impact on monetary balances can be attributed to a degree of substitutability of non-monetary financial instruments in transaction balances (i.e., non-monetary assets can be used to economize on transaction balances).

45. Table 8, in addition to investigating the separate influences of nominal returns and inflation on overall financial depth, provides some insight into the stability of the regression coefficients with respect to changes in the sample data. This sensitivity analysis proceeds by running regressions on data sets comprising the full sample with each region's data deleted one at a time.

46. In terms of the coefficient estimates and their significance levels, the results in Table 8 are consistent across regions—with the exception of the regression for the full-sample *sans* the Sub-Saharan African data—and with the full-sample regression. It turns out that this is an important exception. Whereas all the other regressions show statistically not significant weighted nominal return coefficient estimates of about .5, and show statistically significant inflation elasticities of about -1.0, the *sans* Sub-Saharan regression gives statistically significant estimates for the weighted nominal return elasticity of 1.25 and inflation elasticity of -1.70. It appears as though the Sub-Saharan data is suppressing the influence of these two financial prices.

47. Table 9 presents results for regressions run on the Sub-Saharan data only. Judging from these results, there are either some serious deficiencies in the Sub-Saharan data, or some significant differences in macro-financial behavior in Sub-Saharan Africa when compared with the rest of the regions in the sample. The Sub-Saharan regressions explain a markedly smaller percent of the variation in the depth variables and give exceptionally high numeric estimates for some of the elasticities, in particular the estimate of 12.7 for the weighted nominal return in the overall financial depth equation.[16] These results and the absence of significant, negative inflation elasticities for the overall and non-monetary depth equations, in contrast to all the previous results, suggest something is amiss with the Sub-Saharan

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16 The weighted real return/real devaluation specification of the overall financial depth regression explained only 4% of the variation in the dependent variable. The F-ratio for the entire equation was only 1.5.

equation and/or data. Moreover, having run these regressions on numerous sub-sets of the Sub-Saharan data, it is clear that the odd results for this region cannot be attributed to only a small number of countries.

Table 9
Regression Results
Sub-Saharan Africa Only

	Liquid Liabilities : GDP		Quasi Liquid Liabilities : GDP	M1 : GDP
Constant	-1.58**		-4.79**	-1.27**
Weighted Nominal Return	12.71**	Nominal Deposit Rate	-5.78	-2.97**
Inflation	0.17		-1.88	0.46
Nominal Devaluation vs. SDR	-0.79		1.53	-0.30
Per Capita Income (Wealth)	-0.04		0.45**	-0.07
Adjusted-R^2	.33		.18	.15
Sample Size	36		36	36

48. One possible explanation for the regionally unique macro-financial behavior follows from the relatively early stage of economic and financial development in most Sub-Saharan countries. In early stages of development, formal market mechanisms are weak, particularly those in financial markets. This leaves traditional mechanisms and institutions as the primary vehicles for carrying out economic activities. To examine the possibility that institutions are dominant factors in Sub-Saharan macro-financial activity, the regressions in Table 9 were run with binary variables for the primary European language spoken in the country. These binary language variables proxy the institutional framework bequeathed by the former colonial powers. As it turns out, the language binaries make no significant contribution to explaining financial aggregates. With no adequate behavioral explanation for the exceptionally poor Sub-Saharan regressions, the most likely candidate to

explain the odd Sub-Saharan results is poor quality data.[17] Accordingly, the Sub-Saharan data have been dropped from the sample for subsequent analyses.[18]

Table 10
Regression Results
Full Sample sans Sub-Saharan Africa

	Liquid Liabilities : GDP		Quasi Liquid Liabilities : GDP	M1 : GDP
Constant	-1.29**		-3.62**	-0.61
Weighted Real Return	1.79**	Nominal Deposit Rate	2.18**	-1.19**
Real Devaluation vs. SDR	-0.31	Inflation	-2.58**	-0.04
		Nominal Devaluation vs. SDR	0.15	-0.15
Per Capita Income (Wealth)	0.12*		0.37**	-0.07
Caribbean = 1	-0.23		0.15	-0.75**
East Asia = 1	-0.40**		-0.03	-0.86**
Industrial Countries = 1	-0.26		-0.28	-0.37*
Latin America = 1	-0.63**		-0.29	-0.58**
South Asia = 1	-0.26**		-0.10	-0.78**
Adjusted-R^2	.44		.50	.48
Sample Size	81		81	81

49. Table 10 displays the three basic regressions for the three financial depth variables run on the full-sample *sans* the Sub-Saharan data. The

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17 To assess whether the consumer price data are the suspect data, the Sub-Saharan regressions were run using inflation in the GDP deflator in place of inflation in consumer price data. The results were essentially the same.

18 With an F statistic of 4.35, the standard test for "structural change" can reject the hypothesis that the Sub-Saharan data are part of the overall sample at the 1% level. With F statistics no larger than 1.86 for any of the other regions, the standard test cannot reject equivalent hypotheses for the other regions at even the 5% level.

results are similar to those for the full sample displayed in Table 7, except that elasticity of the overall financial depth with respect to real weighted return is greater, as are the elasticities of the non-monetary depth with respect to the nominal deposit rate and with respect to inflation. Whereas the nominal deposit rate elasticity estimate is not statistically significant in the non-monetary depth equation over the full sample, it is statistically significant over the this sample. Also, the elasticity of monetary depth with respect to the nominal deposit rate is lower in the *sans* Sub-Saharan sample. Accordingly, it can be expected that the estimates of elasticities of overall financial depth with respect to both the weighted nominal return and inflation will be statistically significant in the weighted nominal return/nominal devaluation specification. Table 11 displays the results of this equation and a sensitivity analysis similar to that undertaken in Table 8.

50. However, before proceeding to Table 11, note that the regional binaries are not statistically significant in the non-monetary depth regression. With the Sub-Saharan data out of the sample, the determinants of non-monetary depth appear to be the same across all regions.[19] In fact, with the Sub-Saharan data out of the sample the cross-regional differences in overall financial depth and monetary depth boil down to the difference in monetary depth between the Europe, Middle East, and North Africa region and the rest of the sample countries taken together.[20]

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19 With an F statistic of 1.55, the standard test of the hypothesis that the coefficients on the regional binaries are not all zero cannot be rejected at even the 10% level.

20 F-tests cannot reject the hypotheses that the proper specifications of the overall financial depth and monetary depth regressions entail only one regional binary variable for the Europe, Middle East, and North Africa region. The F statistics are 1.35 and .89 for the overall financial depth and monetary depth equations, respectively.

Table 11
Regression Sensitivity Analysis — 2
Dependent Variable—Liquid Liabilities : GDP

	Full Sample *sans* Sub-Sharan Africa	Full Sample *sans* Sub-Sharan Africa & Caribbean	Full Sample *sans* Sub-Sharan Africa & East Asia	Full Sample *sans* Sub-Sharan Africa & Europe, Middle East, North Africa	Full Sample *sans* Sub-Sharan Africa & Industrial Countries	Full Sample *sans* Sub-Saharan Africa & Latin America	Full Sample *sans* Sub-Saharan Africa & South Asia
Constant	-1.53**	-1.72**	-0.98*	-2.40**	-1.72**	-1.24**	-1.51**
Weighted Nominal Return	1.25**	1.05*	1.42**	1.19*	1.07*	1.67**	1.33**
Inflation	-1.70**	-1.87**	-1.67**	-1.57**	-1.54**	-2.41**	-1.79**
Nominal Devaluation vs. SDR	-0.16	0.17	-0.30	-0.26	-0.13	-0.09	-0.15
Per Capita Income (Wealth)	0.16**	0.19**	0.09	0.22**	0.19**	0.14*	0.16**
Caribbean = 1	-0.30*		-0.29**	0.21	-0.29*	-0.36**	-0.30*
East Asia = 1	-0.44**	-0.45**		0.08	-0.41**	-0.52**	-0.45**
Industrial Countries = 1	-0.39**	-0.42**	-0.27			-0.39**	-0.39**
Latin America = 1	-0.52**	-0.54**	-0.54**	-0.01	-0.52**		-0.52**
South Asia = 1	-0.47**	-0.43*	-0.62**	0.18	-0.42*	-0.59**	
Adjusted-R^2	.51	.51	.58	.55	.51	.33	.49
Sample Size	81	69	68	63	64	66	75

*** indicates significance at the 10% level**

**** indicates significant at the 5% level**

51. In Table 11, the regressions of overall financial depth on the sample with the Sub-Saharan data purged have statistically significant elasticity estimates for the weighted nominal return and inflation, as expected.[21] Accordingly, both policy variables appear operative. If one accepts these results, the next question becomes what are the relative impacts of the two variables. In other words, does raising nominal deposit rates promote financial depth more effectively than lowering inflation? Alternatively, what happens to real deposit rates as nominal rates are increased to offset the corrosive effect of inflation on overall financial depth?

52. Judging from the coefficient estimates for the weighted nominal return and inflation in the regressions displayed in Table 11, overall financial depth respond more elastically to inflation than to the weighted nominal return. Moreover, given that nominal deposit rates—the most practical policy variable for influencing the weighted nominal return—has a weight less than one, i.e., equal to the share of non-monetary instruments in overall financial instrument, raising nominal deposit rates is even less effective at increasing overall financial depth than inflation.[22]

53. For example, using the coefficient estimates for the regression on the full-sample *sans* Sub-Saharan data and given a country with: i) per capita income of US$2,000, ii) zero devaluation, iii) zero inflation, iv) nominal deposit rates of 3% p.a., and v) a 50-50 split between monetary and non-monetary financial instruments, the predicted overall financial depth is equal to 74% of GDP. If inflation (and devaluation) rise to 10%, then overall financial depth drops to 63%. If nominal deposit rates are raised to 13.3% to

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21 Admittedly, by virtue of the data set selection process, the t-tests have lost some power. However, given that: i) no pre-selection of data has occurred prior to this point, ii) the F-test for structural change singled out the Sub-Saharan data as the only region identifiably not part of the overall sample, iii) the coefficient estimates are stable in the sensitivity analysis presented in Table 11, and iv) the results are generally consistent with all of the empirical findings presented in this paper, the author finds the results quite credible. Moreover, to the extent that one is interested in forecasting at this point, rather than hypothesis testing, questions regarding the power of the t-tests are less relevant.

22 The following calculations assume no shifts in the mix of monetary versus non-monetary instruments. Given that higher nominal deposit rates induce a shift towards non-monetary instruments and, thus, raise the nominal deposit rate's weight in the weighted nominal return, the calculations understate the nominal deposit rate's salutary effects on financial depth. Nevertheless, since there are limits to the public's ability to economize on transactions balances, these calculations are probably not overly biased.

maintain a real deposit rate of 3%, then financial depth rises back to 67%. In order to maintain financial depth at 74% of GDP, nominal rates have to be raised to 32%, which translates into a real rate of 21%.

54. At even higher inflation rates, financial depth is suppressed further and the real deposit rates required to offset the corrosive effect of inflation rise dramatically. Maintaining a 3% real deposit rate in the face of inflation at 50% p.a. leaves financial depth at 48% of GDP. Maintaining a 3% real deposit rate at 100% inflation reduces financial depth further to 37% of GDP. The real deposit rates required to fully offset 100% inflation are in excess of 200% p.a. These numbers make it quite clear that raising nominal deposit rates is not an effective way of increasing financial depth. Instead, lower inflation is the only sustainable way to increase financial depth and capture the potential efficiency gains that increasing the scope and scale of the formal financial system can offer to an economy.

55. That inflation has a greater negative effect on overall financial depth than nominal deposit rates have a positive effect probably reflects the fact that higher inflation is generally correlated with more volatile inflation. Since suden bursts of inflation can quickly erode the real value of financial asset balances and can produce dangerous mismatchs in the terms and maturities of the assets and liabilities of financial institutions, higher inflation is strongly correlated with the riskiness of holding financial assets. Accordingly, high inflation may cause risk-averse wealth holders to further shift out of non-monetary financial assets than they would based on the simple price effect.

Conclusions

56. Based on the analysis of macro-financial data from one hundred seventeen developing and industrial countries for the year 1985, it is apparent that

- Overall financial depth, non-monetary financial depth, and the weighted real return on financial assets systematically vary across geographical regions and across per capita income groups.

- Deep financial systems usually reflect non-monetary depth, with the exception of countries in the Europe, Middle East, and North Africa region, which generally reflect monetary depth.

- Monetary depth is broadly consistent across income groups and geographical region, with the exception of the Europe, Middle East and North Africa region, which is unusually deep (reflecting very high M1 : GDP ratios in six of the eighteen sample countries).

- Per capita income (a proxy for wealth or development) and factors associated with geographic location are key determinants of overall financial depth.

- Inflation has a clearly negative influence on overall financial depth.

- Nominal deposit rates have a positive influence on overall financial depth.

- However, inflation is more corrosive on financial depth than nominal deposit rates are salutary. As a result, reducing inflation is the only sustainable way of increasing the size of the financial system. Raising nominal deposit rates to fully offset higher inflation requires maintaining exceptionally high real deposit rates.

- Although this study could not determine which factor is responsible, either anomalous macro-financial behavior or poor data quality (or both) seems to produce odd results when data from the Sub-Saharan region are used in the regression analysis.

Annex

Country Rankings

COUNTRIES BY REGION

Region	Country	Per Capita Income
Sub-Saharan Africa (AF)		
	BENIN	270
	BOTSWANA	840
	BURKINA FASO	150
	BURUNDI	240
	CAMEROON	910
	CENTRAL AFRICAN REPUBLIC	290
	CHAD	140
	CONGO, PEOPLE'S REPUBLIC	1,040
	COTE D'IVOIRE, REPUBLIC OF	740
	ETHIOPIA	120
	GABON	3,020
	GAMBIA, THE	230
	GHANA	390
	KENYA	300
	LESOTHO	410
	MADAGASCAR	230
	MALAWI	160
	MALI	170
	MAURITANIA	440
	MAURITIUS	1,200
	NIGER	260
	NIGERIA	640
	RWANDA	290
	SENEGAL	420
	SEYCHELLES	2,933
	SIERRA LEONE	310
	SOMALIA	280
	SOUTH AFRICA	1,800
	SUDAN	320
	SWAZILAND	600
	TANZANIA	240
	TOGO	250
	UGANDA	250
	ZAIRE	160
	ZAMBIA	300
	ZIMBABWE	620
Caribbean (CR)		
	ANTIGUA AND BARBUDA	2,380
	BAHAMAS	7,190
	BARBADOS	5,140
	DOMINICA	1,210
	DOMINICAN REPUBLIC	710
	GRENADA	1,240

COUNTRIES BY REGION

Region	Country	Per Capita Income
	HAITI	330
	JAMAICA	880
	ST. CHRISTOPHER AND NEVIS	1,700
	ST. LUCIA	1,320
	ST. VINCENT & THE GRENADINES	960
	TRINIDAD AND TOBAGO	5,140
East Asia (EA)		
	CHINA	300
	FIJI	1,810
	INDONESIA	500
	KOREA, REPUBLIC OF	2,370
	MALAYSIA	1,850
	NEW ZEALAND	7,110
	PAPUA NEW GUINEA	690
	PHILIPPINES	570
	SINGAPORE	7,410
	SOLOMON ISLANDS	530
	THAILAND	810
	VANUATU	867
	WESTERN SAMOA	680
Europe, Middle East & North Africa (EMENA)		
	ALGERIA	2,570
	CYPRUS	4,360
	EGYPT, ARAB REPUBLIC OF	760
	GREECE	3,680
	HUNGARY	2,010
	IRELAND	5,080
	ISRAEL	6,210
	JORDAN	1,540
	MALTA	3,470
	MOROCCO	590
	POLAND	2,070
	PORTUGAL	2,230
	SPAIN	4,840
	SYRIAN ARAB REPUBLIC	1,560
	TUNISIA	1,140
	TURKEY	1,110
	YEMEN, ARAB REPUBLIC OF	550
	YUGOSLAVIA	2,300
Industrial Countries (IND)		
	AUSTRALIA	11,910

COUNTRIES BY REGION

Region	Country	Per Capita Income
	AUSTRIA	10,000
	BELGIUM	9,230
	CANADA	14,100
	DENMARK	12,640
	FINLAND	12,180
	FRANCE	10,740
	GERMANY, FEDERAL REPUBLIC	12,080
	ICELAND	13,370
	ITALY	8,570
	JAPAN	12,850
	NETHERLANDS	10,050
	NORWAY	15,480
	SWEDEN	13,170
	SWITZERLAND	17,840
	UNITED KINGDOM	8,920
	UNITED STATES	17,500
Latin America (LA)		
	ARGENTINA	2,350
	BELIZE	1,170
	BRAZIL	1,810
	COLOMBIA	1,230
	COSTA RICA	1,420
	ECUADOR	1,160
	EL SALVADOR	820
	GUATEMALA	930
	HONDURAS	740
	MEXICO	1,850
	PARAGUAY	880
	PERU	1,130
	SURINAME	2,510
	URUGUAY	1,860
	VENEZUELA	2,930
South Asia (SA)		
	BANGLADESH	160
	BURMA	200
	INDIA	270
	NEPAL	160
	PAKISTAN	350
	SRI LANKA	400

COUNTRIES BY OVERALL FINANCIAL DEPTH

County	Region	Liquid Liabilities : GDP
ZAIRE	AF	.09
UGANDA	AF	.10
SOMALIA	AF	.10
GHANA	AF	.10
RWANDA	AF	.13
ARGENTINA	LA	.13
CONGO, PEOPLE'S REPUBLIC	AF	.14
NIGER	AF	.16
PERU	LA	.17
ECUADOR	LA	.17
BURUNDI	AF	.17
CAMEROON	AF	.18
CENTRAL AFRICAN REPUBLIC	AF	.18
GABON	AF	.18
PARAGUAY	LA	.18
BRAZIL	LA	.19
SIERRA LEONE	AF	.19
PHILIPPINES	EA	.21
BURKINA FASO	AF	.21
DOMINICAN REPUBLIC	CR	.21
WESTERN SAMOA	EA	.21
INDONESIA	EA	.22
BANGLADESH	SA	.23
MALAWI	AF	.23
MAURITANIA	AF	.23
GAMBIA, THE	AF	.23
MEXICO	LA	.23
TURKEY	EMENA	.24
BENIN	AF	.24
MADAGASCAR	AF	.24
CHAD	AF	.25
GUATEMALA	LA	.25
SENEGAL	AF	.25
MALI	AF	.25
BOTSWANA	AF	.26
SUDAN	AF	.26
NEPAL	SA	.27
COTE D'IVOIRE, REPUBLIC OF	AF	.28
HAITI	CR	.28
ICELAND	IND	.28
ZAMBIA	AF	.29
SWAZILAND	AF	.29
SRI LANKA	SA	.29
HONDURAS	LA	.29
TANZANIA	AF	.30

COUNTRIES BY OVERALL FINANCIAL DEPTH

Country	Region	Liquid Liabilities : GDP
COLOMBIA	LA	.30
NIGERIA	AF	.32
SOLOMON ISLANDS	EA	.32
SEYCHELLES	AF	.32
PAPUA NEW GUINEA	EA	.34
EL SALVADOR	LA	.35
BURMA	SA	.35
PAKISTAN	SA	.36
URUGUAY	LA	.37
COSTA RICA	LA	.37
FIJI	EA	.37
ETHIOPIA	AF	.38
POLAND	EMENA	.39
KENYA	AF	.39
KOREA, REPUBLIC OF	EA	.39
MAURITIUS	AF	.41
BELIZE	LA	.43
YUGOSLAVIA	EMENA	.43
HUNGARY	EMENA	.43
ZIMBABWE	AF	.43
TOGO	AF	.44
INDIA	SA	.45
FINLAND	IND	.46
SWEDEN	IND	.46
CHINA	EA	.46
TUNISIA	EMENA	.47
JAMAICA	CR	.47
BARBADOS	CR	.48
DOMINICA	CR	.48
IRELAND	EMENA	.49
LESOTHO	AF	.51
BAHAMAS	CR	.51
MOROCCO	EMENA	.52
GRENADA	CR	.52
DENMARK	IND	.53
SOUTH AFRICA	AF	.55
NEW ZEALAND	EA	.55
BELGIUM	IND	.56
NORWAY	IND	.56
TRINIDAD AND TOBAGO	CR	.56
THAILAND	EA	.59
UNITED KINGDOM	IND	.60
GERMANY, FEDERAL REPUBLIC	IND	.61
AUSTRALIA	IND	.62
CANADA	IND	.62

COUNTRIES BY OVERALL FINANCIAL DEPTH

Country	Region	Liquid Liabilities : GDP
SPAIN	EMENA	.62
ST. VINCENT & THE GRENADINES	CR	.62
ANTIGUA AND BARBUDA	CR	.63
VENEZUELA	LA	.65
ST. LUCIA	CR	.66
CYPRUS	EMENA	.66
UNITED STATES	IND	.66
ISRAEL	EMENA	.68
FRANCE	IND	.70
EGYPT, ARAB REPUBLIC OF	EMENA	.71
SYRIAN ARAB REPUBLIC	EMENA	.71
GREECE	EMENA	.73
SURINAME	LA	.78
AUSTRIA	IND	.78
ALGERIA	EMENA	.80
ITALY	IND	.80
NETHERLANDS	IND	.87
VANUATU	EA	.92
YEMEN, ARAB REPUBLIC OF	EMENA	.95
ST. CHRISTOPHER AND NEVIS	CR	1.01
SINGAPORE	EA	1.02
MALAYSIA	EA	1.05
PORTUGAL	EMENA	1.08
JORDAN	EMENA	1.16
MALTA	EMENA	1.35
SWITZERLAND	IND	1.40
JAPAN	IND	1.56

COUNTRIES BY NON-MONETARY DEPTH

Country	Region	Quasi Liquid Liabilities : GDP
ZAIRE	AF	.01
CHAD	AF	.01
CENTRAL AFRICAN REPUBLIC	AF	.01
UGANDA	AF	.01
GHANA	AF	.02
SOMALIA	AF	.02
MALI	AF	.03
CONGO, PEOPLE'S REPUBLIC	AF	.03
MAURITANIA	AF	.04
NIGER	AF	.04
RWANDA	AF	.04
BURUNDI	AF	.04
ECUADOR	LA	.05
BENIN	AF	.05
SIERRA LEONE	AF	.06
BURKINA FASO	AF	.06
SUDAN	AF	.07
GABON	AF	.08
CAMEROON	AF	.09
SENEGAL	AF	.09
ARGENTINA	LA	.09
MADAGASCAR	AF	.10
COTE D'IVOIRE, REPUBLIC OF	AF	.10
TANZANIA	AF	.10
SYRIAN ARAB REPUBLIC	EMENA	.10
PERU	LA	.10
PARAGUAY	LA	.10
GAMBIA, THE	AF	.10
BURMA	SA	.11
INDONESIA	EA	.12
DOMINICAN REPUBLIC	CR	.13
BANGLADESH	SA	.13
PAKISTAN	SA	.13
WESTERN SAMOA	EA	.13
HAITI	CR	.13
ETHIOPIA	AF	.14
NIGERIA	AF	.14
ALGERIA	EMENA	.14
MALAWI	AF	.14
NEPAL	SA	.14
TURKEY	EMENA	.14
ZAMBIA	AF	.15
BRAZIL	LA	.15
PHILIPPINES	EA	.15
GUATEMALA	LA	.16

COUNTRIES BY NON-MONETARY DEPTH

Country	Region	Quasi Liquid Liabilities : GDP
CHINA	EA	.16
BOTSWANA	AF	.16
POLAND	EMENA	.17
HONDURAS	LA	.18
TOGO	AF	.18
MEXICO	LA	.18
ICELAND	IND	.18
MOROCCO	EMENA	.18
SRI LANKA	SA	.19
SOLOMON ISLANDS	EA	.19
COLOMBIA	LA	.19
YEMEN, ARAB REPUBLIC OF	EMENA	.20
EL SALVADOR	LA	.20
SEYCHELLES	AF	.20
SWAZILAND	AF	.20
TUNISIA	EMENA	.20
COSTA RICA	LA	.22
HUNGARY	EMENA	.22
PAPUA NEW GUINEA	EA	.24
KENYA	AF	.26
DENMARK	IND	.26
FIJI	EA	.26
BELIZE	LA	.28
MAURITIUS	AF	.28
INDIA	SA	.29
LESOTHO	AF	.30
KOREA, REPUBLIC OF	EA	.30
URUGUAY	LA	.31
YUGOSLAVIA	EMENA	.31
ZIMBABWE	AF	.32
BARBADOS	CR	.35
SOUTH AFRICA	AF	.35
BELGIUM	IND	.35
SWEDEN	IND	.36
GRENADA	CR	.36
JAMAICA	CR	.36
IRELAND	EMENA	.36
DOMINICA	CR	.37
SURINAME	LA	.37
EGYPT, ARAB REPUBLIC OF	EMENA	.38
NORWAY	IND	.38
FINLAND	IND	.38
ITALY	IND	.40
BAHAMAS	CR	.40
SPAIN	EMENA	.41

COUNTRIES BY NON-MONETARY DEPTH

Country	Region	Quasi Liquid Liabilities : GDP
VENEZUELA	LA	.42
UNITED KINGDOM	IND	.44
TRINIDAD AND TOBAGO	CR	.44
ST. VINCENT & THE GRENADINES	CR	.45
GERMANY, FEDERAL REPUBLIC	IND	.45
FRANCE	IND	.46
NEW ZEALAND	EA	.47
CYPRUS	EMENA	.49
CANADA	IND	.49
ANTIGUA AND BARBUDA	CR	.50
THAILAND	EA	.50
AUSTRALIA	IND	.51
UNITED STATES	IND	.51
ST. LUCIA	CR	.52
GREECE	EMENA	.59
JORDAN	EMENA	.61
AUSTRIA	IND	.65
ISRAEL	EMENA	.65
NETHERLANDS	IND	.66
MALTA	EMENA	.67
VANUATU	EA	.70
SINGAPORE	EA	.80
PORTUGAL	EMENA	.83
ST. CHRISTOPHER AND NEVIS	CR	.85
MALAYSIA	EA	.88
SWITZERLAND	IND	1.09
JAPAN	IND	1.28

COUNTRIES BY MONETARY DEPTH

Country	Region	M1:GDP
ISRAEL	EMENA	.02
BRAZIL	LA	.04
ARGENTINA	LA	.04
PHILIPPINES	EA	.05
URUGUAY	LA	.06
MEXICO	LA	.06
PERU	LA	.06
FINLAND	IND	.08
SOMALIA	AF	.08
PARAGUAY	LA	.08
NEW ZEALAND	EA	.08
WESTERN SAMOA	EA	.08
MALAWI	AF	.08
RWANDA	AF	.08
UGANDA	AF	.08
DOMINICAN REPUBLIC	CR	.08
ZAIRE	AF	.08
SWAZILAND	AF	.08
GHANA	AF	.08
THAILAND	EA	.09
CAMEROON	AF	.09
KOREA, REPUBLIC OF	EA	.09
GUATEMALA	LA	.09
TURKEY	EMENA	.09
BANGLADESH	SA	.09
BOTSWANA	AF	.10
INDONESIA	EA	.10
ICELAND	IND	.10
COLOMBIA	LA	.10
PAPUA NEW GUINEA	EA	.10
GABON	AF	.11
SRI LANKA	SA	.11
SWEDEN	IND	.11
FIJI	EA	.11
AUSTRALIA	IND	.11
ZIMBABWE	AF	.11
CONGO, PEOPLE'S REPUBLIC	AF	.11
YUGOSLAVIA	EMENA	.11
BAHAMAS	CR	.11
TRINIDAD AND TOBAGO	CR	.11
JAMAICA	CR	.12
ECUADOR	LA	.12
DOMINICA	CR	.12
HONDURAS	LA	.12
NIGER	AF	.12

COUNTRIES BY MONETARY DEPTH

Country	Region	M1:GDP
NEPAL	SA	.12
MAURITIUS	AF	.12
SEYCHELLES	AF	.13
BURUNDI	AF	.13
CANADA	IND	.13
ANTIGUA AND BARBUDA	CR	.13
IRELAND	EMENA	.13
AUSTRIA	IND	.13
GAMBIA, THE	AF	.13
SIERRA LEONE	AF	.13
KENYA	AF	.13
SOLOMON ISLANDS	EA	.13
BARBADOS	CR	.13
GREECE	EMENA	.14
ZAMBIA	AF	.14
HAITI	CR	.14
ST. LUCIA	CR	.14
BELIZE	LA	.15
MADAGASCAR	AF	.15
EL SALVADOR	LA	.15
BURKINA FASO	AF	.15
UNITED STATES	IND	.15
COSTA RICA	LA	.15
ST. CHRISTOPHER AND NEVIS	CR	.15
GERMANY, FEDERAL REPUBLIC	IND	.16
SENEGAL	AF	.16
UNITED KINGDOM	IND	.16
INDIA	SA	.16
CENTRAL AFRICAN REPUBLIC	AF	.17
ST. VINCENT & THE GRENADINES	CR	.17
GRENADA	CR	.17
CYPRUS	EMENA	.17
MALAYSIA	EA	.18
COTE D'IVOIRE, REPUBLIC OF	AF	.18
NORWAY	IND	.18
NIGERIA	AF	.18
BENIN	AF	.19
SUDAN	AF	.19
SOUTH AFRICA	AF	.19
MAURITANIA	AF	.20
TANZANIA	AF	.20
BELGIUM	IND	.20
HUNGARY	EMENA	.21
LESOTHO	AF	.21
NETHERLANDS	IND	.21

COUNTRIES BY MONETARY DEPTH

Country	Region	M1:GDP
SPAIN	EMENA	.21
POLAND	EMENA	.21
VANUATU	EA	.22
PAKISTAN	SA	.22
SINGAPORE	EA	.22
MALI	AF	.23
VENEZUELA	LA	.23
CHAD	AF	.24
BURMA	SA	.24
FRANCE	IND	.24
ETHIOPIA	AF	.25
PORTUGAL	EMENA	.25
TOGO	AF	.26
TUNISIA	EMENA	.27
DENMARK	IND	.27
JAPAN	IND	.27
CHINA	EA	.30
SWITZERLAND	IND	.32
MOROCCO	EMENA	.33
EGYPT, ARAB REPUBLIC OF	EMENA	.33
ITALY	IND	.41
SURINAME	LA	.41
JORDAN	EMENA	.56
SYRIAN ARAB REPUBLIC	EMENA	.61
ALGERIA	EMENA	.66
MALTA	EMENA	.67
YEMEN, ARAB REPUBLIC OF	EMENA	.75

COUNTRIES BY CURRENCY DEPTH

Country	Region	Currency : GDP
BRAZIL	LA	.01
ISRAEL	EMENA	.01
ICELAND	IND	.01
NEW ZEALAND	EA	.02
FINLAND	IND	.02
SWAZILAND	AF	.02
PERU	LA	.02
ARGENTINA	LA	.03
BOTSWANA	AF	.03
SOMALIA	AF	.03
DENMARK	IND	.03
SOUTH AFRICA	AF	.03
MEXICO	LA	.03
WESTERN SAMOA	EA	.03
CANADA	IND	.03
URUGUAY	LA	.03
BAHAMAS	CR	.03
YUGOSLAVIA	EMENA	.03
GABON	AF	.03
ECUADOR	LA	.03
CAMEROON	AF	.03
MALAWI	AF	.03
TURKEY	EMENA	.03
PHILIPPINES	EA	.03
ZIMBABWE	AF	.03
COLOMBIA	LA	.04
UNITED KINGDOM	IND	.04
TRINIDAD AND TOBAGO	CR	.04
UGANDA	AF	.04
PAPUA NEW GUINEA	EA	.04
AUSTRALIA	IND	.04
VENEZUELA	LA	.04
DOMINICA	CR	.04
KOREA, REPUBLIC OF	EA	.04
JAMAICA	CR	.04
PARAGUAY	LA	.04
BANGLADESH	SA	.04
DOMINICAN REPUBLIC	CR	.04
UNITED STATES	IND	.04
ZAMBIA	AF	.04
FIJI	EA	.04
RWANDA	AF	.04
INDONESIA	EA	.04
FRANCE	IND	.04
ZAIRE	AF	.04

COUNTRIES BY CURRENCY DEPTH

Country	Region	Currency: GDP
COSTA RICA	LA	.04
NIGER	AF	.05
LESOTHO	AF	.05
KENYA	AF	.05
NORWAY	IND	.05
CONGO, PEOPLE'S REPUBLIC	AF	.05
GUATEMALA	LA	.05
SWEDEN	IND	.05
BARBADOS	CR	.05
ANTIGUA AND BARBUDA	CR	.05
GHANA	AF	.05
BENIN	AF	.05
IRELAND	EMENA	.05
GERMANY, FEDERAL REPUBLIC	IND	.05
HONDURAS	LA	.06
ST. CHRISTOPHER AND NEVIS	CR	.06
SRI LANKA	SA	.06
MAURITIUS	AF	.06
MADAGASCAR	AF	.06
BURUNDI	AF	.06
THAILAND	EA	.06
BELIZE	LA	.06
EL SALVADOR	LA	.06
AUSTRIA	IND	.06
ITALY	IND	.06
SENEGAL	AF	.06
ST. LUCIA	CR	.06
SEYCHELLES	AF	.06
GAMBIA, THE	AF	.06
SOLOMON ISLANDS	EA	.07
JAPAN	IND	.07
BURKINA FASO	AF	.07
HAITI	CR	.07
NIGERIA	AF	.07
NETHERLANDS	IND	.07
SPAIN	EMENA	.07
VANUATU	EA	.07
SIERRA LEONE	AF	.07
GRENADA	CR	.08
MAURITANIA	AF	.08
CYPRUS	EMENA	.08
PORTUGAL	EMENA	.08
BELGIUM	IND	.08
MALAYSIA	EA	.08
NEPAL	SA	.08

COUNTRIES BY CURRENCY DEPTH

Country	Region	Currency : GDP
COTE D'IVOIRE, REPUBLIC OF	AF	.08
SUDAN	AF	.08
TUNISIA	EMENA	.09
HUNGARY	EMENA	.09
POLAND	EMENA	.09
ST. VINCENT & THE GRENADINES	CR	.09
GREECE	EMENA	.09
TANZANIA	AF	.10
INDIA	SA	.10
CHINA	EA	.10
MALI	AF	.11
PAKISTAN	SA	.11
TOGO	AF	.11
SWITZERLAND	IND	.12
SINGAPORE	EA	.12
CENTRAL AFRICAN REPUBLIC	AF	.13
MOROCCO	EMENA	.13
ETHIOPIA	AF	.13
CHAD	AF	.16
EGYPT, ARAB REPUBLIC OF	EMENA	.19
SURINAME	LA	.20
BURMA	SA	.22
ALGERIA	EMENA	.25
SYRIAN ARAB REPUBLIC	EMENA	.34
JORDAN	EMENA	.35
MALTA	EMENA	.58
YEMEN, ARAB REPUBLIC OF	EMENA	.62

COUNTRIES BY INFLATION

Country	Region	Inflation (% p.a.)
BURUNDI	AF	-6.0
RWANDA	AF	-2.7
CHAD	AF	-0.4
NIGERIA	AF	-0.3
BELIZE	LA	-0.3
BURKINA FASO	AF	0.0
SURINAME	LA	0.0
SRI LANKA	SA	0.0
NIGER	AF	0.3
MALTA	EMENA	0.4
MALAYSIA	EA	0.6
SINGAPORE	EA	0.6
ST. VINCENT & THE GRENADINES	CR	0.9
VANUATU	EA	0.9
CAMEROON	AF	1.2
CONGO, PEOPLE'S REPUBLIC	AF	1.2
SEYCHELLES	AF	1.4
ST. LUCIA	CR	1.4
GRENADA	CR	1.5
JAPAN	IND	1.6
ANTIGUA AND BARBUDA	CR	1.6
NETHERLANDS	IND	1.8
GERMANY, FEDERAL REPUBLIC	IND	1.8
JORDAN	EMENA	1.8
AUSTRIA	IND	2.7
BARBADOS	CR	2.7
KOREA, REPUBLIC OF	EA	3.0
SWITZERLAND	IND	3.1
TOGO	AF	3.4
ST. CHRISTOPHER AND NEVIS	CR	3.5
THAILAND	EA	3.5
UNITED STATES	IND	3.5
DENMARK	IND	3.6
CYPRUS	EMENA	3.6
DOMINICA	CR	3.8
HONDURAS	LA	4.0
BENIN	AF	4.0
BELGIUM	IND	4.1
CANADA	IND	4.2
PAPUA NEW GUINEA	EA	4.3
COTE D'IVOIRE, REPUBLIC OF	AF	4.4
BAHAMAS	CR	4.6
INDONESIA	EA	4.8
FRANCE	IND	4.8
BURMA	SA	4.9

COUNTRIES BY INFLATION

Country	Region	Inflation (% p.a.)
IRELAND	EMENA	4.9
FINLAND	IND	4.9
MAURITIUS	AF	5.1
UNITED KINGDOM	IND	5.5
NORWAY	IND	5.7
SWEDEN	IND	6.4
PAKISTAN	SA	6.7
MALI	AF	6.7
WESTERN SAMOA	EA	6.8
VENEZUELA	LA	6.9
TRINIDAD AND TOBAGO	CR	7.1
TUNISIA	EMENA	7.2
ZIMBABWE	AF	7.3
GABON	AF	7.7
PHILIPPINES	EA	7.7
HUNGARY	EMENA	7.7
BOTSWANA	AF	7.9
INDIA	SA	8.0
NEPAL	SA	8.0
SOLOMON ISLANDS	EA	8.1
FIJI	EA	8.2
SPAIN	EMENA	8.2
AUSTRALIA	IND	8.2
MOROCCO	EMENA	8.8
ITALY	IND	8.9
CHINA	EA	9.0
BANGLADESH	SA	10.2
MALAWI	AF	10.5
MADAGASCAR	AF	10.8
EGYPT, ARAB REPUBLIC OF	EMENA	10.9
KENYA	AF	11.4
SENEGAL	AF	11.5
COSTA RICA	LA	11.6
ALGERIA	EMENA	11.7
CENTRAL AFRICAN REPUBLIC	AF	12.3
HAITI	CR	12.3
NEW ZEALAND	EA	13.0
GAMBIA, THE	AF	13.3
MAURITANIA	AF	15.4
POLAND	EMENA	16.0
PORTUGAL	EMENA	16.3
SOUTH AFRICA	AF	17.4
YEMEN, ARAB REPUBLIC OF	EMENA	17.9
GHANA	AF	19.4
LESOTHO	AF	19.7

COUNTRIES BY INFLATION

Country	Region	Inflation (% p.a.)
ETHIOPIA	AF	20.6
SWAZILAND	AF	21.4
GREECE	EMENA	23.0
JAMAICA	CR	23.2
COLOMBIA	LA	23.6
ECUADOR	LA	24.7
PARAGUAY	LA	24.9
SYRIAN ARAB REPUBLIC	EMENA	25.4
DOMINICAN REPUBLIC	CR	27.0
GUATEMALA	LA	29.9
TANZANIA	AF	30.7
EL SALVADOR	LA	31.3
SOMALIA	AF	32.9
ZAIRE	AF	34.7
ICELAND	IND	37.5
TURKEY	EMENA	44.1
ZAMBIA	AF	47.8
MEXICO	LA	60.6
SUDAN	AF	64.6
SIERRA LEONE	AF	69.7
URUGUAY	LA	76.8
YUGOSLAVIA	EMENA	79.7
UGANDA	AF	122.5
PERU	LA	169.2
ISRAEL	EMENA	205.8
BRAZIL	LA	234.7
ARGENTINA	LA	452.4

COUNTRIES BY WEIGHTED REAL RETURN

Country	REGION	Veighted Real Return (% p.a.)
UGANDA	AF	-53.9
PERU	LA	-40.0
SIERRA LEONE	AF	-38.9
SUDAN	AF	-37.0
ZAMBIA	AF	-27.5
ZAIRE	AF	-23.7
SOMALIA	AF	-22.5
TANZANIA	AF	-22.5
ARGENTINA	LA	-21.6
SYRIAN ARAB REPUBLIC	EMENA	-19.5
YUGOSLAVIA	EMENA	-19.2
EL SALVADOR	LA	-19.0
GUATEMALA	LA	-18.6
DOMINICAN REPUBLIC	CR	-16.8
ICELAND	IND	-16.2
ETHIOPIA	AF	-15.3
ECUADOR	LA	-14.1
GHANA	AF	-13.9
PARAGUAY	LA	-13.5
YEMEN, ARAB REPUBLIC OF	EMENA	-13.5
MEXICO	LA	-12.5
MAURITANIA	AF	-12.4
POLAND	EMENA	-11.5
LESOTHO	AF	-11.4
CENTRAL AFRICAN REPUBLIC	AF	-10.5
ALGERIA	EMENA	-9.7
TURKEY	EMENA	-8.6
GREECE	EMENA	-8.5
GAMBIA, THE	AF	-8.3
SWAZILAND	AF	-8.3
SENEGAL	AF	-7.9
JAMAICA	CR	-7.1
CHINA	EA	-6.1
EGYPT, ARAB REPUBLIC OF	EMENA	-5.8
MOROCCO	EMENA	-5.6
MALI	AF	-5.6
HAITI	CR	-5.4
NEPAL	SA	-5.2
MADAGASCAR	AF	-5.1
SOUTH AFRICA	AF	-4.8
HUNGARY	EMENA	-4.8
TUNISIA	EMENA	-4.7
URUGUAY	LA	-4.5
GABON	AF	-4.2
COLOMBIA	LA	-3.8

COUNTRIES BY WEIGHTED REAL RETURN

Country	REGION	Veighted Real Return (% p.a.)
FIJI	EA	-3.6
KENYA	AF	-3.6
PAKISTAN	SA	-3.1
ITALY	IND	-3.1
SOLOMON ISLANDS	EA	-3.0
INDIA	SA	-3.0
BANGLADESH	SA	-2.9
MALAWI	AF	-2.5
BENIN	AF	-2.3
BURMA	SA	-2.2
NORWAY	IND	-2.0
COSTA RICA	LA	-2.0
BOTSWANA	AF	-1.8
TRINIDAD AND TOBAGO	CR	-1.8
COTE D'IVOIRE, REPUBLIC OF	AF	-1.8
SPAIN	EMENA	-0.9
TOGO	AF	-0.5
NEW ZEALAND	EA	-0.3
FRANCE	IND	-0.2
DOMINICA	CR	0.0
AUSTRALIA	IND	0.0
ZIMBABWE	AF	0.2
CYPRUS	EMENA	0.2
BELGIUM	IND	0.4
SWITZERLAND	IND	0.4
VENEZUELA	LA	0.5
CONGO, PEOPLE'S REPUBLIC	AF	0.5
CHAD	AF	0.6
AUSTRIA	IND	0.6
BAHAMAS	CR	0.6
IRELAND	EMENA	0.7
DENMARK	IND	0.7
UNITED KINGDOM	IND	0.7
WESTERN SAMOA	EA	1.2
JAPAN	IND	1.3
NETHERLANDS	IND	1.3
MAURITIUS	AF	1.4
BARBADOS	CR	1.4
NIGER	AF	1.5
GERMANY, FEDERAL REPUBLIC	IND	1.7
PAPUA NEW GUINEA	EA	1.8
ST. CHRISTOPHER AND NEVIS	CR	1.8
HONDURAS	LA	1.9
MALTA	EMENA	2.1
BURKINA FASO	AF	2.1

COUNTRIES BY WEIGHTED REAL RETURN

Country	REGION	Weighted Real Return (% p.a.)
BRAZIL	LA	2.1
SWEDEN	IND	2.3
FINLAND	IND	2.4
CAMEROON	AF	2.6
JORDAN	EMENA	2.6
CANADA	IND	2.8
UNITED STATES	IND	2.9
GRENADA	CR	3.2
ST. VINCENT & THE GRENADINES	CR	3.4
SINGAPORE	EA	3.6
PORTUGAL	EMENA	3.8
SURINAME	LA	3.8
NIGERIA	AF	4.3
SEYCHELLES	AF	4.4
KOREA, REPUBLIC OF	EA	4.5
VANUATU	EA	4.8
INDONESIA	EA	4.9
RWANDA	AF	5.0
ST. LUCIA	CR	5.7
ANTIGUA AND BARBUDA	CR	6.6
THAILAND	EA	7.4
MALAYSIA	EA	7.4
BELIZE	LA	7.5
BURUNDI	AF	7.6
PHILIPPINES	EA	9.2
SRI LANKA	SA	11.1
ISRAEL	EMENA	25.2

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